

## What is Claimed is:

- [c1] A method for parametric testing integrated circuit packages having pin counts greater than  $n$  on a tester having less than  $n$  tester channels comprising the steps of:
- providing a testing environment of the circuit package;
  - grouping package pins into banks based on circuit input and output constraints and on the testing environment of the circuit package;
  - simulating external testing with reduced pin count to remove any test measures which are outside of an active bank;
  - applying testing patterns to circuit package from tester having less test channels then pins on the test package.
- [c2] The method of claim 1 which includes designing the integrated circuit packages to include boundary scan such that most circuit outputs have their driver and enable signals controlled by scannable boundary latches.
- [c3] The method of claim 2 wherein most circuit inputs have their receiver data observable in scannable boundary latches and with all circuit signal inputs and outputs which do not have boundary latches being included in a bank that is always connected to tester channels.
- [c4] The method of claim 1 which includes the step of analyzing the integrated circuit physical design data and logical test data.
- [c5] The method of claim 4 wherein the grouping of pins includes determining presence of differential I/O to be banked.
- [c6] The method of claim 5 wherein grouping of pins includes determining presence of voltage references to be banked.
- [c7] The method of claim 6 wherein grouping of pins includes determining presence of I/O with banking restrictions.
- [c8] The method of claim 7 which includes determining the multiple banking configurations allowable for the integrated circuit package.

[c9] The method of claim 8 which includes selecting a banking configuration for the integrated circuit package that can also be used to apply the external tests to other integrated circuits; and allowing the test of several integrated circuits to share the same banking configuration and hardware.

[c10] A method for parametric testing of ASIC having pin counts greater than  $n$  on a tester having less than  $n$  tester channels comprising:

analyzing the ASIC physical design data and logical test data determining presence of differential I/O voltage reference I/O and I/O with banking restrictions; and  
 apply testing patterns to ASIC from tester having less test channels than pins on the ASIC.